

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY


(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 02 JUN 2006

WIPO

PCT

| | | | | |
|--|--|---|--|----------------------|
| Applicant's or agent's file reference L 1924 PCT | | FOR FURTHER ACTION | | See Form PCT/PEA/416 |
| International application No. PCT/US2004/032801 | | International filing date (day/month/year) 06.10.2004 | Priority date (day/month/year) 12.11.2003 | |
| International Patent Classification (IPC) or national classification and IPC INV. H01J9/24 H01J17/16 | | | | |
| Applicant 3M INNOVATIVE PROPERTIES COMPANY et al. | | | | |
| <p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> sent to the applicant and to the International Bureau) a total of sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> | | | | |
| <p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p> | | | | |
| Date of submission of the demand 12.09.2005 | | Date of completion of this report 01.06.2006 | | |
| Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465 | | Authorized officer Tano, V Telephone No. +49 89 2399-5785 | | |



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/US2004/032801

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-21 as originally filed

Claims, Numbers

1-14 filed with telefax on 17.02.2006

Drawings, Sheets

1/3-3/3 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/US2004/032801

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | |
|-------------------------------|-------------|------|
| Novelty (N) | Yes: Claims | 1-14 |
| | No: Claims | - |
| Inventive step (IS) | Yes: Claims | - |
| | No: Claims | 1-14 |
| Industrial applicability (IA) | Yes: Claims | 1-14 |
| | No: Claims | - |

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item V.

- 1 The following documents are referred to in this communication:
- D1: PATENT ABSTRACTS OF JAPAN vol. 1999, no. 04, 30 April 1999 (1999-04-30) & JP 11 007894 A (TOPPAN PRINTING CO LTD), 12 January 1999 (1999-01-12)
 - D2: US-A-5 772 486 (SEKI ET AL) 30 June 1998 (1998-06-30)
 - D3: EP-A-1 306 872 (TORAY INDUSTRIES, INC) 2 May 2003 (2003-05-02)
 - D4: WO 01/52299 A (3M INNOVATIVE PROPERTIES COMPANY; KIKUCHI, HIROSHI; YOKOYAMA, CHIKAHUM) 19 July 2001 (2001-07-19)
 - D5: US-A-5 972 564 (KAWANA ET AL) 26 October 1999 (1999-10-26)

2 Independent claim 1

2.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of **claim 1** does not involve an inventive step in the sense of Article 33(3) PCT.

2.1 Document **D1** discloses the following features of present **claim 1** (the references in parentheses applying to this document): a method of making a substrate for a PDP (see the abstract and figure) comprising: forming an electrode precursor (dielectric layer paste 2) on a surface of a substrate (8) in a pattern, forming a rib precursor layer (barrier rib paste 3) on the surface of the substrate (8) on which the electrode precursor layer has been formed; and simultaneously sintering the electrode precursor layer and the rib precursor layer (see solution, I.2, I.4).

The subject-matter of **claim 1** therefore differs from this known from **D1** in that: the electrode precursor comprises a photocurable material, wherein after the electrode precursor is formed, the precursor layer is irradiated with light capable of initiating curing under a nitrogen gas atmosphere.

The problem to be solved by the present invention may therefore be regarded as how to form the electrodes of a PDP.

The use of photocurable materials and of photolithography methods is well known in the field of PDP in order to form the electrodes, cf. e.g. document **D5** (par. 3, I. 19-28). Document **D5**, which relates to the formation of electrodes of a PDP by photolithography, explains that exposure is preferred to be performed in nitrogen gas (col. 7, I. 4-5).

Therefore, the person skilled in the art, when faced with the problem of forming the electrodes of the PDP described in **D1** would find document **D5** and implement the above

solution in the PDP of **D1**, thus arriving at the subject-matter of present **claim 1** without the need of an inventive activity.

4 Dependent claims 2-14

4.1 Dependent **claims 2-14** do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step (Article 33(2) and (3) PCT).

4.2 For completeness, it is pointed out that document **D3** discloses a method of manufacturing a substrate of a PDP (see the abstract) where an electrode pattern and a barrier rib pattern are fired simultaneously; document **D4**, also cited by the applicant, discloses a method of forming barrier ribs by using a flexible mold (cf. present claims 5-9).

5 Miscellaneous:

5.1 The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

5.2 Contrary to the requirements of Rule 5.1(a)(ii) PCT, documents D1- D3 are not mentioned in the description, nor are these documents identified therein.